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From Digital Knowledge Strategy to Sustainable Performance: Evidence of a Dynamic Capabilities Pathway in Developed vs Developing Economies

Abstract

Purpose - The study examines digital knowledge strategy through deliberate and emergent planning approaches to build dynamic capabilities for innovation and achieve sustainable performance gains amid environmental dynamism in developing and developed economies, particularly under regulatory obligations imposed by mandatory compliance regimes.

Design/methodology/approach - This study adopts a quantitative research design, gathering data from Brazilian and English firms in the variety sector. A total of 302 responses were obtained and analyzed using structural equation modeling.

Findings – The study reveals that digital knowledge strategy influences sustainable through dynamic capabilities in sensing, seizing, and transforming into prosperous and emerging economies. The post hoc analysis, using generalized additive models, shows that firms with high levels of digital knowledge strategy to achieve higher dynamic capabilities and sustainable performance under environmental dynamism in both countries. However, under these conditions, digital knowledge strategy, innovation-related dynamic capabilities, and sustainable performance appear more developed in the United Kingdom than in Brazil.

Originality/value - As the first empirical evidence validating the proposed research model, this study suggests that digital knowledge strategy plays an essential role in enhancing sustainable performance through dynamic capabilities in innovation under environmental dynamism in prosperous and emerging economies, while also opening pathways for future knowledge management research on the operationalization of digital technologies in knowledge strategy.

Keywords: Digital knowledge strategy, digital technologies, dynamic capabilities, sustainable performance, environmental dynamism.

1. Introduction

Global sustainability policies are increasingly shifting sustainable performance from voluntary environmental initiatives to regulatory and market requirements. Examples include Brazil's sustainability regulations (Securities and Exchange Commission, 2023) and European Union initiatives promoting integrated sustainability reporting (European Parliament and Council of the European Union, 2014). As sustainability-related markets expand and regulatory pressures intensify, firms increasingly need strategic and innovation capabilities that enable them to respond to environmental challenges while identifying new opportunities for sustainable value creation (Osei *et al.*, 2024; Peçanha and Ferreira, 2025).

From a strategic management perspective, we recognize the theoretical relevance of the Resource-Based View (RBV), which posits that a firm's resource base underpins its ordinary capabilities in supporting enterprise strategy, and that resources characterized as valuable, rare, inimitable, and non-substitutable form the basis of sustained performance differentials (Barney, 1991; Grant, 1991). However, ordinary capabilities alone may be insufficient when firms face technological change, shifting market conditions, and sustainability challenges (Chotia *et al.*, 2026). Recent studies show that strategic knowledge associate with dynamic capabilities (DCs) play an important role in helping enterprises improve innovation success (Li, Teece, *et al.*, 2025) and reduce innovation failure in complex markets (Chatterjee *et al.*, 2023), while also supporting sustainable performance (SUP) (Annunziata *et al.*, 2018).

The Dynamic Capabilities Theory [DCT, (Teece, Pisano and Shuen, 1997)], defines DCs as a firm's capacity to integrate, build, and reconfigure internal and external competencies in response to changing environments. At the same time,

Knowledge-Based Theory (KBT) emphasizes knowledge as a critical organizational resource whose management becomes particularly challenging in digital environments characterized by rapid change, real-time decision-making, and intensified competition (Li, Teece, *et al.*, 2025; Wang *et al.*, 2026). Yoshikuni *et al.* (2025) show that knowledge strategy embedded in digital technologies enable firms to pursue deliberate and emergent patterns of action, building organizational capabilities that support exploration and exploitation innovation, such as ambidexterity.

Knowledge strategy helps firms align their current knowledge resources with the knowledge required to formulate, implement, and adapt organizational strategy (Bolisani and Bratianu, 2017; Li, Peng and Li, 2024). However, increasing attention has been devoted to the relationships among information technology, digital technologies, knowledge management processes, and DCs (Cepeda and Vera, 2007; Cepeda-Carrion *et al.*, 2017; Kamasak, Yozgat and Yavuz, 2017; Chan, Denford and Wang, 2019; Yan, Tran-Danh and Hong, 2019; Hughes and Hodgkinson, 2021; Qi *et al.*, 2024; Zheng, 2024; Yu *et al.*, 2025), considerably less is known about how a knowledge strategy enabled by digital technologies can foster innovation-oriented DCs and subsequently enhance SUP under challenging environmental conditions.

This issue is particularly relevant because digital technologies increasingly support the integration of deliberate and emergent strategic processes. Prior research on business and technology alignment demonstrates the importance of aligning technologies with both strategy content and strategy processes (Henderson and Venkatraman, 1999; Chan and Reich, 2007; Kohli and Grover, 2008; Chen *et al.*, 2010; Gerow *et al.*, 2014; Coltman *et al.*, 2015). More recent studies further show that digital technologies facilitate the dissemination and integration of strategic knowledge across organizational levels, allowing firms to combine top-down strategic direction with locally

generated insights and thereby strengthen strategizing activities (Henfridsson and Lind, 2014; Marabelli and Galliers, 2017; Chantias, Myers and Hess, 2019; Vial, 2019; Yoshikuni, Dwivedi, Tito, *et al.*, 2025).

Despite advances in understanding how digital technologies shape knowledge strategy (Yoshikuni, Dwivedi, Tito, *et al.*, 2025), debates persist over their practical utility and effectiveness (Morton, Amrollahi and Wilson, 2022; Amrollahi *et al.*, 2025), particularly when examined through a lens that distinguishes between deliberate and emergent planning modes for achieving SUP (Bowman and Parks, 2024) under challenges of external environment (Lawton and Vassolo, 2022). Yet, research still provides limited insight into how digital technologies enable strategic planning and enterprise capabilities that translate into performance outcomes across different economic contexts (Lawton and Vassolo, 2022). Deliberate strategy processes often falter when top management fails to structure planning practices or deploy tools that effectively communicate goals, leaving middle and lower managers misaligned and disengaged (Mintzberg and Water, 1985; Bolisani and Bratianu, 2017; Wolf and Floyd, 2017).

Similarly, firms fail when they do not adapt emergent strategies to market demands in complex environments when employees' knowledge is not integrated into wider strategic discussions (Mintzberg and Water, 1985; Jarzabkowski and Kaplan, 2015; Heyden *et al.*, 2017). This misalignment breaks the strategic learning feedback loop, undermining an organization's ability to refine, adapt, and evolve its strategies over time. Consequently, finding an effective balance between deliberate and emergent planning remains a central challenge. At the same time, there is a pressing need to examine how digital technologies can reinforce this balance by building DCs - organizational routines for sensing, seizing, and transforming - and by strategically

aligning knowledge activities (Li, Teece, *et al.*, 2025) across varying economic and institutional conditions (Guo *et al.*, 2025). Regarding corporate sustainable performance, De Angelis *et al.* (2023) call for future research to examine when and how strategic orientation can build DCs for sensing, seizing, and transforming to create business model innovation amid environmental challenges.

Although digital knowledge strategy (DKS), innovation-oriented DCs, SUP, and environmental dynamism (ED) have individually received attention in previous studies (Jansen, Vera and Crossan, 2009; Mikalef *et al.*, 2020; Kristoffersen *et al.*, 2021; Yoshikuni, Dwivedi, Tito, *et al.*, 2025). These constructs have largely been examined separately. Consequently, empirical understanding remains limited of the process through which DKS, operationalized through deliberate and emergent planning approaches, develops sensing, seizing, and transforming capabilities, and how these capabilities subsequently contribute to SUP under varying levels of ED. Moreover, digital organizational failure occurs due to strategic misalignment, because firms fail to formulate and execute plans that adequately respond to external environmental challenges (Sithipolvanichgul *et al.*, 2025).

This limitation is also relevant in practice. Industry evidence suggests that a substantial proportion of digital technology initiatives do not generate the expected business, innovation, or sustainability outcomes (Mouton and Images, 2018; Bughin, Deakin and O'beirne, 2019; Forth *et al.*, 2020; Hattfield *et al.*, 2024; Touborg, 2024). Correspondingly, the knowledge-based literature calls for deeper investigation into how organizations can develop and mobilize knowledge through digital technologies to integrate top-down and bottom-up strategy processes and strengthen sustainability outcomes across different organizational and market conditions (Massa *et al.*, 2023). Yoshikuni *et al.* (2026) similarly call for greater understanding of how digital

technologies support strategizing activities by integrating emergent and prescriptive planning approaches in dynamic and complex markets.

Collectively, these arguments reveal three interrelated research gaps. First, limited research has examined how digitally enabled knowledge strategies foster innovation-oriented DCs by integrating deliberate and emergent strategizing. Second, the mechanism through which these capabilities translate DKS into SUP under ED remains insufficiently understood. Third, empirical evidence remains limited on whether these relationships differ across developed and developing economic contexts. Addressing these gaps, this study proposes that stronger DKS enhances innovation-oriented DCs, which in turn contribute to SUP under changing environmental conditions.

Within this framework, DCs represent the organization's ability to sense opportunities and threats, seize them through appropriate resource deployment, and transform organizational processes and resources to sustain competitiveness (Teece, 2007, 2014; Teece, Peteraf and Leih, 2016). ED reflects the rate, magnitude, and unpredictability of changes in competitive conditions, customer preferences, and technological developments (Jansen, Vera and Crossan, 2009; Wilhelm, Schlömer and Maurer, 2015). SUP, in turn, encompasses both environmental performance (Hua *et al.*, 2025; Sharma *et al.*, 2025; Shoaib *et al.*, 2025) and corporate reputation performance (Khan, Daddi and Iraldo, 2020; Kristoffersen *et al.*, 2021; Yoshikuni, Dwivedi, Filho, *et al.*, 2025), capturing the extent to which organizations reduce environmental impacts while strengthening long-term relationships and perceptions among stakeholders. Accordingly, the first research question is:

RQ1. How does digital knowledge strategy enable dynamic capabilities that translate into sustainable performance under environmental dynamism?

The study further considers whether these relationships vary across geographic and institutional contexts by comparing Brazil and the United Kingdom (UK), representing developing and developed economies, respectively. This comparative perspective responds to calls for greater contextualization of strategic processes across different institutional and economic environments (Lawton and Vassolo, 2022). Furthermore, Li, Teece et al. (2025) call for comparative research across diverse knowledge management contexts to examine how enterprises fully align knowledge resources and build DCs to sense, seize, and transform to achieve sustainable competitiveness. Yoshikuni et al. (2025) highlight the need for further research on DKS by examining how external conditions shape its effects, including compliance regimes, sustainability-related demands, environmental uncertainty and volatility, and contrasts between emerging and advanced economies, together with firm-specific attributes such as organizational size, firm age, strategic posture, and industry domain.

Moreover, Peçanha and Ferreira (2025) outline a research agenda that encourages studies on how cultural differences shape sustainability strategies, sustainable innovation capabilities, DCs for addressing sustainability challenges, and sustainability performance, particularly as these elements are strengthened by digital technologies. In 2024, Brazil's economy, classified as mixed and developing, recorded a gross domestic product of US\$4.17 trillion, with key contributions from agriculture, mining, manufacturing, and the services sector. By contrast, the UK exhibited a high-income, service-oriented, and globally integrated developed economy, achieving a GDP of US\$3.64 trillion (CIA, 2025). Consequently, we ask a second research question:

RQ2. How do the relationships among digital knowledge strategy, innovation-oriented dynamic capabilities, and sustainable performance under environmental dynamism differ across geographic contexts?

To address these research questions, the study proposes and empirically validates a theoretically grounded model that integrates DKS, DCs, SUP, and ED, using evidence from organizations in Brazil and the UK. The proposed relationships are examined through partial least squares structural equation modeling (PLS-SEM), complemented by post hoc analyses using generalized additive models (GAMs), allowing investigation of both the hypothesized relationships and potentially non-linear patterns associated with ED.

Theoretically, this study addresses important gaps in the literature on digitally enabled knowledge strategy, dynamic capabilities, sustainability performance, and environmental dynamism. First, it clarifies how DKS contributes to capability development by explaining how digitally enabled strategic knowledge is converted into sensing, seizing, and transforming capabilities, thereby connecting knowledge-based and dynamic capability perspectives. Second, it advances understanding of how DKS contributes to sustainability outcomes by examining DCs as the mechanism through which digitally enabled strategic knowledge is translated into SUP. Third, it extends predominantly linear accounts by considering the contingent and potentially non-linear influence of ED on these relationships. Finally, by examining organizations across multiple industries in Brazil and the UK, the study responds to calls for greater contextualization. It provides comparative evidence from both emerging and developed economic settings.

From a managerial perspective, the study guides how firms can use digital technologies to strengthen strategic decision-making and capability development. The findings show how DKS can help C-level, senior, and middle managers integrate dispersed strategic information, recognize emerging opportunities and threats, coordinate resources, and translate strategic priorities into organizational action. By combining deliberate top-down direction with emergent bottom-up knowledge, firms can strengthen their sensing, seizing, and transforming capabilities and respond more effectively to changing business and sustainability requirements. These implications are particularly relevant for organizations operating across different institutional and economic contexts, where the effectiveness of digitally enabled knowledge and sustainability practices may depend on local market maturity and environmental dynamism.

2. Theory and Hypotheses Development

The study drew on knowledge-based theory (KBT) in conjunction with the firm's resource-based view (RBV) and dynamic capability theory (DCT), which view strategic knowledge as a resource enabled by digital technologies, allowing firms to develop, deploy, and transfer knowledge to support strategy making (Yoshikuni, Dwivedi, Tito, *et al.*, 2025) and build dynamic capabilities [DCs,(Li, Teece, *et al.*, 2025)] to achieve corporate sustainable performance under environmental challenges (Osei *et al.*, 2024). Hence, this research employs the framework of digital knowledge strategy (DKS) associated with the firm's DCs in innovation to leverage sustainable performance (SUP) in environmental contexts.

Digital technologies encompass systems of data processing, computational power, communication, and interconnectedness, triggering profound changes in how

organizations across various sectors support and design their strategies impact advantage competitive (Henfridsson and Lind, 2014; Marabelli and Galliers, 2017; Chanias, Myers and Hess, 2019; Vial, 2019; Morton, Amrollahi and Wilson, 2022; Yoshikuni, Dwivedi, Tito, *et al.*, 2025). The following sections examine knowledge strategy through the deliberate and emergent perspectives, emphasizing the role of digital technologies in shaping what is termed DKS. This study proposes that DKS enhance DCs in three key clusters of innovation capabilities (sensing, seizing, and transforming) and ultimately, these enhanced organizational capabilities serve as a foundation for achieving SUP under environmental dynamism (ED).

2.1 Digital knowledge strategy

Digital knowledge strategy (DKS) can be classified as core to contemporary strategic planning framework, grounding in the knowledge management and strategy-as-practice concept, (Yoshikuni, Dwivedi, Tito, *et al.*, 2025). As stated, DKS enables organizations to appreciate value from digital technologies to realize prescriptive and emergent planning (Bolisani and Bratianu, 2017; Yoshikuni, Galvão and Albertin, 2022). Current research integrates digital tools and strategizing practices to enable prescriptive and emergent planning to organizations build capabilities and leverage performance (Kohli and Grover, 2008; Henfridsson and Lind, 2014; Whittington, 2014; Marabelli and Galliers, 2017; Morton, Amrollahi and Wilson, 2022). Digital applications are integrated into the organization's routines, shaping the form of their vision, developing strategies, executing plans, collaborating, and managing their business processes to achieve outcomes performance (Kohli and Grover, 2008; Chan, Denford and Wang, 2019; Moeini, Rahrovani and Chan, 2019).

Strategic alignment of digital tools with knowledge requirements is crucial to ensuring effective strategy execution (Chan, Denford and Wang, 2019; Li, Peng and Li, 2024; Yoshikuni, Dwivedi, Tito, *et al.*, 2025; Yu *et al.*, 2025). A deliberate planning mode reflects the firm's strategic posture and its view of knowledge as a critical asset, with formal direction and support originating from senior leadership to align with the enterprise strategy work (Mintzberg and Water, 1985; Wolf and Floyd, 2017; Hamann, Halw and Guenther, 2023). Digital tools strengthen strategic planning by improving firms' access to reliable, comprehensive internal control information, particularly within board interlock networks (Fang, Li and Wang, 2026). DKS supports an integrated, actionable approach (Kersten *et al.*, 2022) that lets firms leverage knowledge strategically to achieve organizational goals and performance targets (Bolisani and Bratianu, 2017; Yoshikuni, Galvão and Albertin, 2022; Shaik *et al.*, 2024). Then, DKS improves firms' coordination and communication by building cognitive and social capital. It strengthens employees' shared understanding and their commitment to a common vision and strategic direction (Restuputri *et al.*, 2024; Yoshikuni, Dwivedi, Tito, *et al.*, 2025). Moreover, digital tools can support a deliberate strategizing practice through descriptive, predictive, and prescriptive analysis. Hence, digital applications enable organizations to identify and uncover patterns in information related to past and present events, revealing issues about the past and providing insights into the present (what has happened and what is happening), and guiding decisions on the future, what the organization should do (what could happen) to enable DCs in innovation (Yoshikuni, Galvão and Albertin, 2022; Yoshikuni, Dwivedi, Filho, *et al.*, 2025).

The emergent strategy perspective emphasizes a firm's ability to adjust its strategic actions in response to changing conditions and emerging opportunities over time (Mintzberg and Water, 1985; Bolisani and Bratianu, 2017; Yoshikuni, Dwivedi,

Tito, *et al.*, 2025). Shared and well-communicated goals are critical for enabling collaboration because they motivate employees to share resources and insights, strengthen mutual understanding (Ali and Varoğlu, 2022; Kersten *et al.*, 2022), and help colleagues interpret strategic priorities through collective interactions with stakeholders (Kersten *et al.*, 2022; Li, Peng and Li, 2024). Enterprises should attend to weak signals arising from lower organizational levels, drawing on cognitive elements such as intuition and emotion alongside analytical, rational assessment (Wolf and Floyd, 2017; Hughes and Hodgkinson, 2021). Moreover, emergent strategizing using digital technologies allow organizations to support strategic intent and to capture emergent everyday events and practices at the ground level of organizations, performed by individuals and groups, oriented by strategic direction and policies (Henfridsson and Lind, 2014; Baptista, Wilson and Galliers, 2021). Chanas et al. (2019) and Wiener (2025) highlight that digital technologies shape strategy-making through a continuous and evolving process, where planning and execution happen side by side, without a fixed destination or endpoint to achieve.

Morton and colleagues (2022) document a growing alignment between IS scholarship and strategy-as-practice research, reflecting a common interest in the human-centered dynamics through which technology and strategizing unfold inside organizations, particularly in digital-driven strategizing. For example, digital tools such as big data, analytics, business intelligence, machine learning, and artificial intelligence help organizations leverage large amounts of data to better understand their environment (Huynh, Nippa and Aichner, 2023; Yoshikuni, Dwivedi, Filho, *et al.*, 2025; Yoshikuni *et al.*, 2026). Through decision-support systems, AI-enabled knowledge creation dynamically realigns organizational actions with corporate strategy (Li, Wang, *et al.*, 2025). Hence, AI supports predictive models and algorithmic pricing techniques,

and reduced costs of experimentation in innovation, enhance strategic planning by helping firms forecast market shifts, assess their competitive position, and proactively reconfigure resources (Xing, Zhang and He, 2026). Digital connectivity enhances transparency, trust, and customer collaboration, while also fostering new modes of value creation through firms' open strategizing capability-based decision-making, lean management practices, and employees' skills (Amrollahi *et al.*, 2025). The innovative adoption of diverse digital technologies embedded in strategic planning enables data sharing, enhances visibility (Morton, Wilson and Cooke, 2020), and supports dynamic interactions with multiple stakeholders, driving a strategic renewal of the value proposition by integrating firm strategic resources and capabilities with mutual learning (Mantere and Whittington, 2021).

Therefore, in this study, DKS framework refers to the use of digital tools to support strategizing through a balance between prescriptive and emergent planning (Yoshikuni, Dwivedi, Tito, *et al.*, 2025). It combines a clearly articulated corporate vision that defines strategic goals and objectives with formal knowledge-transfer practices, social networks, and interpersonal interactions that foster dialogue, facilitate informal knowledge sharing, and support the achievement of those goals.

2.2 Effects of DKS on dynamic capabilities

DCT explains how some firms build more successful organizational capabilities than other organizations to gain corporate performance under environmental challenges (Helfat and Winter, 2011; Helfat and Raubitschek, 2018; Teece, 2018; Bechtel, Kaufmann and Kock, 2023; Girod, Birkinshaw and Prange, 2023). These investigations contend that DCs, based on the extension theory of RBV, enables enterprises to adapt and realign their internal and external resources, effectively

managing uncertain environments by deploying dynamic organizational capabilities. Previous studies demonstrate that digital technologies enable specific forms of DCs, such as agility capabilities (Tallon et al., 2019; Mikalef et al., 2020), supply chain capacity (Wamba et al., 2020; Dubey et al., 2023), radical and incremental innovation capabilities (Mikalef and Krogstie, 2020), or ambidexterity (Yoshikuni, Dwivedi, Filho, et al., 2025), which can touch upon the capacities of sensing, seizing, and transforming (Steininger et al., 2022; Li, Teece, et al., 2025).

Growing the studies investigate how strategic knowledge management (Li, Teece, et al., 2025) support DCs and builds firms innovation to (a) sense capability to identify, develop, co-develop, and shape opportunities and threats that are possible to attend to customer needs and business requirements (Teece, Peteraf and Leih, 2016); (b) to seize capability to capture opportunities by mobilizing required organizational resources to attend requirements of market (Wamba et al., 2020; Bechtel, Kaufmann and Kock, 2023; Yoshikuni, Dwivedi, Filho, et al., 2025); (c) to enhance, combine, protect, and, if necessary, reconfigure organizational assets (intangible and tangible) to maintain competitiveness (Wamba et al., 2020; Girod, Birkinshaw and Prange, 2023).

DKS, in terms of sensing capacity, supports organizations in monitoring the internal and external environment and facilitates planning and decision-making through digital technologies, such as business intelligence (BI) (Peters *et al.*, 2016) and big data analytics (Pappas *et al.*, 2018; Yoshikuni, Dwivedi, Filho, *et al.*, 2025; Zhang *et al.*, 2025). Digital tools, such as the Internet of Things (IoT), machine learning, artificial intelligence, and social platforms, play a crucial role in enhancing a firm's sensing capabilities by leveraging the vast amounts of data they generate (Kulichyova *et al.*, 2025). The data, enabled by digital technologies, supports companies in strategy-

making and knowledge-driven innovations (Yoshikuni, Galvão and Albertin, 2022), identifying emerging business opportunities, and anticipating potential threats, ultimately helping them stay ahead of competitive pressure and new market entrants through sensing capacities (Ghosh *et al.*, 2022). For instance, AI-enabled predictive models and algorithmic pricing techniques, and reduced costs of experimentation in innovation, enhance strategic planning by helping firms forecast market shifts, assess their competitive position, and proactively reconfigure resources (Xing, Zhang and He, 2026). DKS regards transforming capacities as helping organizations build the ability to recombine assets to enable ordinary and DCs to maintain sustainable competitiveness (Steininger *et al.*, 2022; Yoshikuni, Galvão and Albertin, 2022). DKS helps organizations to build IT infrastructures that support process innovation (incremental, radical, or disruptive) by enabling reconfiguration in how operational capabilities are utilized through digital resources that create value for the company (Vial, 2019; Warner and Wäger, 2019; Kulichyova *et al.*, 2025). Moreover, DKS can support enterprise to build capacity to develop business model transformation through the digital transformation culture (Ghosh *et al.*, 2022).

Therefore, existing research has examined how knowledge management, digital technologies, and strategizing contribute to capability development, but these streams remain fragmented. This study proposes that DKS connects them through digital technologies, integrating top-down strategic direction with bottom-up knowledge and mobilizing it for strategic adaptation. Through this process, DKS strengthens firms' ability to sense opportunities, seize them, and transform their organizational resources and routines. Thus, it is proposed that DKS (by integrating rational and emergent strategizing practices) influence the development of DCs (sense, seize, and transform) in the context of innovation, and following the hypothesis:

H1: Digital knowledge strategy influences dynamic capabilities.

2.6 Effects of digital knowledge strategy and dynamic capabilities on sustainable performance

Current studies show that SUP can be assessed through performance measures of economic (Rathore and Gupta, 2025), competitiveness (Kristoffersen *et al.*, 2021), social impact (Dubey *et al.*, 2019; Huo, Gu and Wang, 2019; Aziz *et al.*, 2024), corporate reputation (Amui *et al.*, 2017; Khan, Daddi and Iraldo, 2020; Yoshikuni, Dwivedi, Filho, *et al.*, 2025), and environmental outcomes (Hua *et al.*, 2025; Sharma *et al.*, 2025; Shoaib *et al.*, 2025). Due to the impracticality of measuring all dimensions of SUP, this study focuses specifically on environmental and corporate reputation metrics. Environmental performance (EP) refers to how organizations minimize their environmental impact to conserve natural resources and reduce pollution through their products and services (Hua *et al.*, 2025; Sharma *et al.*, 2025; Shoaib *et al.*, 2025). Corporate reputation performance (CRP) represents the enduring public perception of an organization, as well as the quality of its long-term relationships with customers, business partners, investors, and employees (Khan, Daddi and Iraldo, 2020; Kristoffersen *et al.*, 2021; Yoshikuni, Dwivedi, Filho, *et al.*, 2025).

In the twenty-first century, the sustainability debate has become central to discussions regarding how organizations' strategy can establish operational capacity to achieve world-class SUP (Amui *et al.*, 2017; Osei *et al.*, 2024). This new paradigm of strategic management for sustainability means that organizations develop capabilities in innovation to sense and seize opportunities to transform routines in a dynamic to achieve corporate sustainable performance in complex market (Khan, Daddi and Iraldo, 2020). According to Steininger *et al.* (2022) and Li, Teece *et al.* (2025) argue that business strategy is supported with digital technologies

(technological, organizational, and managerial resources) to build DCs (sensing, seizing, and transforming) to leverage organizational performance, such as competitive, financial, sustainability, and firm value under the external environment challenges. Moreover, digital-driven strategizing, firm`s capabilities must still be combined with adequate knowledge business strategy to generate a sustainable competitive advantage (Amui *et al.*, 2017).

Therefore, the literature suggests that DKS provides the knowledge-based strategic foundation through which firms align digital resources with sustainability priorities, while DCs convert this strategic alignment into sensing, seizing, and transforming actions that enhance environmental and corporate reputation performance. Drawing on the preceding discussion, the following hypotheses are proposed.

H2: Dynamic capabilities influence sustainable performance.

H3: Dynamic capabilities mediate the relationship between digital knowledge strategy and sustainable performance.

2.4 Effects of environmental dynamism

Strategic management literature argues that DCs contribute to enhancing operating-routine performance to leverage outcomes performance under environmental challenges (Winter, 2003; Teece, Peteraf and Leih, 2016). In contingency theory, environmental challenges are typically categorized into aggregate external factors (Donaldson, 2014; Wolf and Floyd, 2017). Environmental dynamism (ED) is defined as the rate and unpredictability of change within a firm's industry environment. This construct encompasses the speed at which products and services become obsolete, technological advancements occur, and the degree to which

competitors' actions and fluctuations in product and service demand are difficult to anticipate (Jansen, Vera and Crossan, 2009; Wilhelm, Schlömer and Maurer, 2015). The impact of DCs is shaped by the level of ED (Helfat and Raubitschek, 2018), as organizations must continually adapt, renew, and reorganize their operational routines to respond to the challenges posed by external conditions (Teece, Pisano and Shuen, 1997; Teece, Peteraf and Leih, 2016).

Contemporary research on strategy planning suggests organizations should design their strategies to help them build organizational capabilities that adapt to conditions influenced by internal and external factors to achieve performance (Wolf and Floyd, 2017; Amrollahi *et al.*, 2025). In uncertain environments of dynamism, digital applications enable firms to maintain an effective interplay between planned strategy and rapid in-the-moment adjustment (Fan *et al.*, 2026), strengthening resilience and adaptability so the organization stays reliably responsive despite structural constraints, mental lock-in, and deeply embedded routines (Yoshikuni, Dwivedi, Tito, *et al.*, 2025).

This is because rapid shifts in products/services, markets, consumer requirements, and technological advancements often pressure organizations to build capacity within their processes to respond to these challenges (Wilhelm, Schlömer and Maurer, 2015; Teece, Peteraf and Leih, 2016). Previous research on IS strategies indicates that organizations adopting digital technologies are better equipped to respond to ED and enhance their operational capabilities (Li and Chan, 2019; Baptista, Wilson and Galliers, 2021; Morton, Amrollahi and Wilson, 2022; Steininger *et al.*, 2022; Yoshikuni, Dwivedi, Filho, *et al.*, 2025) and SUP.

Therefore, the literature suggests that ED not only creates external pressure but also shapes how much DKS translates into DCs and SUP, as faster, more unpredictable changes in the industry environment increase firms' need to integrate deliberate strategic direction with rapid, knowledge-based adaptation. This empirical study proposes the hypotheses that environmental dynamism moderates in the relationship of the proposed model.

H4a: The relationship between digital knowledge strategy and dynamic capabilities is influenced by the level of environmental dynamism.

H4b: The relationship between dynamic capabilities and sustainable performance is influenced by the level of environmental dynamism.

2.7 Geographical contexts

The contingency factors, including geographic location, competitive pressures, and industry context, as influential determinants of proximate and distal organizational outcomes (Wolf and Floyd, 2017). Research on RBV, KBT and DCT related to information technology and digital capabilities has shown that variables such as the competitive market conditions and regional context play a crucial role in determining how organizations balance immediate results with long-term performance (Melville, Kraemer and Gurbaxani, 2004; Kohli and Grover, 2008; Steininger *et al.*, 2022).

Brazil and the United Kingdom (UK) differ markedly, as mentioned in the CIA World Factbook report (CIA, 2025). The main distinctions between the two countries lie in their geography, economy, demographics, and government structures. Geography dimension, Brazil is approximately thirty-five times larger than the UK, characterized by a tropical climate, diverse terrain, and abundant natural resources. In

contrast, the UK has a temperate climate, predominantly lowland terrain, and moderate reserves of fossil fuels. Brazil has a larger and more demographically diverse population characterized by substantial urbanization and pronounced regional disparities, whereas the UK features a smaller, aging population, robust public services, and a multicultural demographic profile. Brazil has a mixed, developing economy with a 2024 gross domestic product (GDP) of US\$4.17 trillion, driven by agriculture, mining, manufacturing, and services. In contrast, the UK has a high-income, developed country, service-based economy with strong global integration and a 2024 GDP of US\$3.64 trillion. Finally, Brazil operates under a federal presidential system, with a directly elected president and state-level autonomy. In contrast, the UK operates under a unitary parliamentary monarchy, where the prime minister leads the government and the monarchy plays a largely symbolic role. As a result, local contexts and cultural norms shape distinct strategic assumptions and visions tied to where the firm operates, with digital technologies serving as key enablers (Steininger *et al.*, 2022; Yoshikuni, Dwivedi, Filho, *et al.*, 2025).

Moreover, enterprises in developing and developed countries are implementing laws and regulations to encourage the adoption of green initiatives and to lead amid the significant economic impacts of climate change (Li *et al.*, 2024). For instance, in 2023, Brazilian sustainability regulations were introduced by the Securities and Exchange Commission (CVM) through Resolution No. 193, which requires publicly held companies, investment funds, and securitization companies to disclose sustainability-related financial information in line with international standards issued by the ISSB for fiscal years starting in 2025 (Securities and Exchange Commission, 2023). Since 2014, the European Union has promoted best practices in sustainability reporting and corporate disclosure through Directive 2014/95/EU, which requires

sustainability disclosures (European Parliament and Council of the European Union, 2014).

Therefore, contingency factors such as geography, the economy, and government influence corporate sustainability performance, including the use of natural resources, the economy's capacity to invest in technology, and government roles in adopting green initiatives. Thus, comparison enables the study to investigate whether differences in institutional maturity, digital readiness, strategic-planning practices, sustainability pressures, and environmental dynamism shape the strength of the relationships among DKS, DCs, and SUP under dynamic market. This contextualized perspective extends to KBT and DCT by examining whether the processes through which firms mobilize strategic knowledge and reconfigure organizational resources operate similarly across developing and developed economies. Accordingly, this empirical study proposes the following hypothesis.

H5: Geographic context influences the proposed model relationships, resulting in significant cross-group differences in their effects on sustainable performance.

The literature review has outlined key concepts associated with DKS, DCs, and SUP under ED. Figure 1 shows the research model.

[insert Figure 1 here]

3. Methodology

3.1 Research design

This research used a quantitative, cross-country, confirmatory methodology to examine links among digital knowledge strategy (DKS), dynamic capabilities (DCs), sustainable performance (SUP), environmental dynamism (ED), and firm

characteristics, across different economic contexts. The research focuses on enterprises in Brazil and the UK, respectively, developing and developed economies with regulatory frameworks well-suited to evaluating strategic build-innovation dynamic capabilities to enhance corporate sustainable performance.

3.2 Data collection

This research was conducted across the agribusiness, commerce, finance, manufacturing, services, and public service sectors, including organizations of various sizes in Brazil and the UK. Brazilian and English industries are highly relevant to their national economies and contribute significantly to global economic activity (CIA, 2025). In Brazil and the UK, respondents were required to be senior executives actively involved in strategic decision-making and green or sustainability-related activities.

Prior to data collection, the study followed the cross-cultural research guidelines proposed by Hult et al.(2008) to establish construct equivalence across Brazil and the UK. First, functional equivalence was ensured by confirming that the constructs and organizational practices examined performed comparable roles in both national contexts. Second, conceptual equivalence was established by verifying that the constructs represented the same theoretical domains and meanings in both countries. Third, category equivalence was addressed by applying the same definitions, classification criteria, and measurement structure to respondents and organizations in both samples.

Hence, the same theoretical and operational eligibility criteria were also applied in both contexts. Respondents were required to be senior executives actively involved in strategic decision-making and environmental or sustainability-related activities.

Equivalent screening procedures were then used to verify their organizational roles, industry backgrounds, and strategic responsibilities. Hence, to further enhance data quality and construct validity, all respondents received identical survey instruments and standardized instructions, including explicit guidance to consult knowledgeable executives within their organizations when answering items outside their direct areas of expertise. This procedure reduced the risk of informant bias and ensured that responses reflected organizational-level practices rather than individual perceptions.

In Brazil, organizations were identified through the Technology and Analytics in Management, Accounting, and Finance (TAMAF) research group directory and recruited via multiple complementary channels, including personal networks, professional associations, email distribution lists, web-based discussion communities, and business directories. Such multi-channel executive recruitment strategies are well established in IS and management research for targeting hard-to-reach senior decision-makers (Mikalef and Gupta, 2021; Yoshikuni, Dwivedi, Filho, *et al.*, 2025). In the UK, the same eligibility criteria were operationalized through a market research service provider that maintains a rigorously profiled global pool of corporate decision makers. Market research service screening procedures ensured that only executives matching the same role, industry, and strategic responsibility criteria used in Brazil were invited to participate. In line with previous studies that adopted the online survey tool developed and operated by industry research (Akter *et al.*, 2016; Wamba *et al.*, 2017, 2020; Kristoffersen *et al.*, 2021). We obtained 302 usable questionnaires, surpassing the minimum sample threshold recommended for partial least square structure equation modeling (PLS-SEM) analysis (Hair *et al.*, 2022). The sample size count must be at minimum tenfold the total structural pathways leading to a given reflective construct (Hair *et al.*, 2022), establishing a threshold of at least 50 cases

The measurement-model assessment provided further support for cross-country comparability. As reported in Table 3, the reflective measurement model was evaluated for indicator reliability, internal consistency, construct reliability, convergent validity, and discriminant validity, confirming that the constructs were measured reliably across the two subsamples (Hair *et al.*, 2022). Collectively, these procedures strengthened the functional equivalence of the target populations and the comparability of the Brazilian and UK subsamples. The survey was conducted from August 2025 to December 2025 in both countries.

3.3 Scale

The research has adopted established measurement scales for DKS, DCs, SUP, and ED, using a Likert scale ranging from 1 (strong disagreement) to 7 (strong agreement). For DKS is classified as a Type II second-order construct [reflective first-order, formative second order (Becker *et al.*, 2012)], by a seminal study from (Mintzberg and Water, 1985; Henfridsson and Lind, 2014; Bolisani and Bratianu, 2017), operationalized through Yoshikuni *et al.* (2025), comprising in two constructs: Rational (RS) and emergent strategy (ES) planning. Both constructs are defined as first-order reflective constructs with four items. The respondents answered how their firm's effectiveness in leveraging digital technologies facilitates knowledge strategy. For example, RS planning, including "A thorough analysis of the organization's strategy planning before implementation." ES planning contains statements like "Our organization often adopts unexpected strategies in response to new opportunities and challenges."

DCs is classified as a Type II second-order construct (reflective first-order, formative second-order), which was adopted by a seminal study from Venkatraman (1989) and complemented it by Teece and colleagues (Teece, Peteraf and Leih, 2016) and Mikalef and Krogstie (2020). DCs comprise three first order reflective constructs: sensing (DCS), seizing (DCZ) and transforming (DCT) with three items for each construct. DCS included items such as “We frequently scan the environment to identify new business opportunities”. DCZ, including “When opportunities or threats are sensed, our organization has effective routines for drafting various potential solutions”. DCT, such as “Our organization can successfully create new or substantially changed ways of achieving our targets and objectives”.

SUP was conceptualized as a second-order formative construct comprising two first-order reflective constructs: environmental performance (EP), and corporate reputation performance (CRP) adopted from Kristoffersen et al. (2021). EP with three items, contained statements like, “We reduced energy consumption. CRP with four items, such as “We improved corporate image among customers”. ED is first-order reflexive constructs adopted was adopted by Jansen et al.(2009) and Yoshikuni et al. (2025). ED with five items, such as “Environmental changes in our local market are intense.”

Control variables were evaluated using firm competitive strategy (CS) by Miles and Snow (1978): The four CS is characterized by: (a) the prospector, representing firms that pioneer the introduction of new products and services; (b) the analyzer, which follows market leaders in launching innovations; (c) the defender, focused on protecting established market positions; and (d) the reactor, characterized by the absence of a consistent strategy, responding only after losing market share. Company size is classified by number of employees as Small (up to 49), Medium (50–499), and Large

(over 500). Organization age is categorized in years: young firms have operated for less than 10 years, established firms for 10 to less than 20 years, and mature firms for 20 years or more, reflecting progressively greater organizational experience, stability, and capability development; and the industry sector comprises the following: agribusiness (agriculture, livestock, fisheries, and related areas), commerce (wholesale, retail, international trade, and related areas), finance (banks, financial institutions, insurance companies, and related areas), industry, service (textiles, metallurgy, energy, chemicals, paper, and related areas), and government services, following Hernandez et al. (2026). All control variables were operationalized using dummy coding. Following Malhotra's recommendations (Malhotra, 2010), a preliminary assessment was conducted with 34 organizations. Minor refinements were made to the questionnaire to improve the clarity of instructions, item wording, and instrument labeling.

3.4 Statistical technique

The suggested research framework was analyzed using PLS-SEM to several advantages: (a) its robustness against deviations from multivariate normality (see Table 1, Shapiro-Wilk test, $p\text{-value} < 0.001$); (b) its capacity to handle complex structural models; (c) its suitability for smaller sample sizes; (d) its ability to incorporate reflective and formative constructs; (e) its capability to assess indirect and total effects; (f) its effectiveness in comparing path coefficients through multi-group analysis; and (g) its role in enhancing model precision by examining relationships among multi-item constructs, thereby reducing potential measurement errors (Hair et al., 2022).

3.5 Common method bias

To strengthen the reliability and validity of the research findings, common method bias was addressed during the study's design phase. Measures were implemented to enhance response accuracy, including the careful selection of participants capable of providing well-informed answers, the development of precise and unambiguous item statements, the application of counterbalancing techniques to mitigate order effects, and the assurance of respondent anonymity (Sekaran, 2016).

A measured latent marker variable (MLMV) was employed to assess the minimal correlations between the MLMV construct and SUP, which comprises four formative indicators as defined by Yoshikuni and colleagues (Yoshikuni, Dwivedi, Filho, *et al.*, 2025). The explained variance (R^2) was compared with and without the MLMV measure. The change in explained variance of SUP was less than 2%, indicating there was no common method bias concern in the analysis. Additionally, a non-response bias assessment was conducted by analyzing respondents' roles across all constructs using an Independent Samples T-Test, which revealed no systematic differences (Table 1).

[Insert Table 1 here]

3.6 Endogeneity test

The endogeneity test was conducted by analyzing Gaussian copula model parameters, using as a reference the latent variable coefficients estimated by PLS-SEM, indicated in the guidance on identifying and addressing endogeneity provided by Hult et al. (2018). It is crucial to verify that variables suspected of exhibiting endogeneity do not follow a normal distribution to fulfill the Gaussian copula model's assumptions (Becker, Proksch and Ringle, 2022). The Shapiro–Wilk procedure

indicated that each variable deviated from a normal distribution (Table 1) (Sarstedt and Mooi, 2014). Full outputs appear in Appendix A and show that the evaluated Gaussian copulas (ES, RS, DCS, DCZ, DCT, and ED) were not significant (all $p > 0.05$).

Specifically, when considering SUP's six predictor constructs as potentially endogenous, the estimated Gaussian coefficients were -0.176 for CES (p -value=0.486), 0.314 for CRS (p -value=0.085), -0.013 for CDCS (p -value=0.935), -0.124 for CDCZ (p -value=0.521), -0.171 for COTC (p -value=0.490), and 0.188 for CET (p -value=0.558). Furthermore, additional analyses considering all other combinations of Gaussian copulas within the model confirmed the absence of significant copula effects (Appendix A). The structural model results indicate that endogeneity is not present in this study, supporting the robustness and validity of the findings (Sarstedt, Ringle and Ting, 2020).

4. Results and analysis

4.1 Demography and organizational characteristics

The demographic characteristics of the sample are presented in Table 2. In Brazil, 93% of respondents were C-level executives and 7% were senior executive manager. In the UK, the percentages were 90% and 10%, respectively. Competitive strategies also differed: Brazilian firms had a higher proportion of defenders (38%), while English firms favored prospectors (41%) and analyzers (35%). Most firms were mature, accounting for 74% in Brazil and 75% in the UK. The industries sector representation in Brazil was led by manufacturing (36%) and services (38%), whereas the UK firms were predominantly in services (59%). Large firms comprised 80% of the

Brazilian sample, whereas the UK sample was more evenly split between large (49%) and medium-sized (45%) companies.

[Insert Table 2 here]

4.2 Measurement model

Table 3 presents the assessment of the reflective measurement model, including construct reliability, indicator reliability, convergent validity, and discriminant validity. Internal consistency and construct reliability were examined using composite reliability (CR) and Cronbach’s alpha (CA). Table 3 shows that every construct exceeds the recommended 0.70 cutoffs for both CR and CA, indicating high reliability of the reflective latent measures. Convergent validity was evaluated with average variance extracted (AVE), and all constructs report AVE values above 0.50 in Table 3, providing evidence of adequate convergent validity (Hair et al., 2022).

[insert Table 3 here]

The Fornell-Larcker criterion and the Heterotrait-Monotrait ratio (HTMT), together with the cross-loading approach, were used to evaluate the constructs’ discriminant validity. All retained indicators exhibit loadings greater than 0.70, confirming adequate reliability. The HTMT ratios for all reflective constructs fell below the 0.81 threshold, providing evidence of adequate discriminant validity (Henseler et al., 2015), see Table 4. To evaluate model fit, multiple fit indices were employed, including the standardized root mean square residual (SRMR), and normed fit index (NFI), following recommendations by Hair et al. (Hair et al., 2022). The SRMR value

was 0.06, remaining below the 0.080 threshold, while the NFI value was 0.769, which, although below the ideal 0.95 benchmark, indicated an acceptable model fit.

[insert Table 4 here]

The DKS, DCs, and SUP constructs, structured as a second-order reflective-formative model, were analyzed for multicollinearity and the statistical significance of its indicator weights. The variance inflation factor (VIF) was employed to evaluate multicollinearity, yielding a value of 2.09 for all measures (Table 5), below the acceptable limit of 5 (Hair et al., 2022).

[insert Table 5 here]

4.3 Structural model

Figure 2 displays the PLS-based structural model, which was evaluated using R^2 values, path coefficients (β), and predictor effect sizes (f^2). The model explained 57.6% of the variance in DCs ($R^2=0.576$), and 32.7% in SUP ($R^2=0.327$). The path coefficient analysis of DKS revealed a statistically significant direct effect on DCs [(DKS→DCs: $f^2=1.092$, $\beta=0.716$, $T=20.330$, $p\text{-value}<0.001$), thereby supporting hypothesis H1. Firms' DCs demonstrated a significant impact on SUP [(DCs→SUP: $f^2=0.090$, $\beta=0.376$, $T=4.424$, $p\text{-value}<0.001$), supporting hypothesis H2. The effect mediation of DCs in the relationship between DKS and SUP demonstrates full mediation (Variance account for = 100%), because direct effect was not statistically significant (DKS→SUP: $f^2=0.008$, $\beta=0.112$, $T=1.299$, $p\text{-value}>0.05$), supporting hypothesis H3. Additionally, the results of ED moderation was not significantly in the relationship between DKS and DCs ($f^2=0.004$, $\beta=-0.035$, $T=0.886$, $p\text{-value}>0.05$), and

DCs and SUP ($f^2=0.000$, $\beta=-0.013$, $T=0.258$, $p\text{-value}>0.05$), indicating no support hypotheses H4a and H4b.

The effect size (f^2) analysis demonstrated that all direct effects surpassed the established thresholds of 0.09 and 1.09, indicating moderate to substantial effect sizes. The control variables (competitive strategy, industry sector, organizational size, and firm age) were also examined and showed no significant effects (all $p > 0.05$).

The measurement invariance of composite models was conducted prior to a multi-group partial least square (MGA-PLS), and partial invariance was established, indicating that the path coefficient estimates can be meaningfully compared across groups. The PLS-MGA was conducted to assess differences in the structural relationships between the Brazilian and UK subsamples. The multi-group analysis revealed a statistically significant difference in the DKS→DCs path coefficient between the Brazilian and UK subsamples ($p < 0.05$). No statistically significant difference was found in the DCs→SUP path coefficient ($p > 0.05$). Statistically significant differences were also observed in the R^2 values for DCs and SUP between the two subsamples ($p < 0.05$; Table 6).

[insert Table 6 here]

Differences in the mean scores of the first-order constructs were examined across the Brazilian and UK subsamples (Table 6). An independent-samples t-test was initially considered; however, the Shapiro–Wilk test indicated that the normality assumption was violated ($p < 0.05$). Therefore, the non-parametric Mann–Whitney U test was used. Statistically significant differences emerged between the mean scores of the Brazilian and UK subsamples for ES, RS, DCZ, DCT, EP, and ED ($p < 0.05$), with the UK subsample showing higher scores. There were no statistically significant

differences observed in the mean scores of DCS and CRP ($p > 0.05$). Together, the PLS-MGA and Mann–Whitney U test identified cross-country differences in selected path coefficients and construct scores, providing partially support for H5.

4.4 Post hoc Analysis

The result presents a deepened understanding of the relationships among DKS, DCs, SUP and ED. Figure 2 shows a summary of the statistical analysis of the proposed model. However, the results also raise intriguing questions. Specifically, it was hypothesized that higher levels of ED would positively moderate the relationships between DKS on DCs, and DCs on SUP. The analysis conducted using the proposed PLS-SEM model indicated that the variable ED did not have a significant linear moderating effect on the relationships between DKS and DCs, nor between DCs and SUP. The strategic management, dynamic capability and IT-business value literatures in the field suggest that such an effect should be present in the relationships of the proposed model research (Melville, Kraemer and Gurbaxani, 2004; Teece, Peteraf and Leih, 2016; Wolf and Floyd, 2017).

Since, in the PLS-SEM model, the variable ED did not show a significant moderation effect of DKS on DCs, nor of DCs on SUP. It turned into a generalized additive model (GAM). This can be advantageous because PLS-SEM is a linear approach that models the conditional mean of the dependent variable. Hence, the post hoc analysis aims to assess whether this absence of statistically significant moderation effects in the PLS-SEM model may be related to functional form restrictions rather than to the absence of conditional relationships per se. PLS-SEM evaluates linear moderation effects based on product terms and estimates average conditional effects.

However, the dynamic capability literature suggests that the influence of ED may operate in a nonlinear or threshold-based manner.

Accordingly, the post hoc analysis examines whether potential nonlinear conditional patterns may have been insufficiently approximated by linear interaction terms. This reasoning follows established precedent in the literature. Wamba et al. (2020) document theoretically expected moderation effects that were not supported in PLS-SEM and subsequently conduct post hoc nonlinear analyses to explain these unexpected results. Moreover, recent methodological research emphasizes that GAMs are particularly suitable as diagnostic tools when theoretically expected effects are not detected under linear specifications, as they allow researchers to assess whether null findings stem from genuine absence of relationships or from functional form misspecification (Failenschmid *et al.*, 2025).

The GAM is a semi-parametric approach that extends traditional regression by allowing nonlinear relationships and smooth interactions among variables without imposing rigid functional forms (Wood, Goude and Shaw, 2015). Instead of one coefficient per predictor, a GAM fits smoothing functions (penalized splines) for each variable and, when needed, bivariate surfaces (e.g., tensor products) to capture nonlinear moderation (Zhang, Fang and Zhang, 2022).

The model equations will take the form given in (1) and (2):

$$DCs = s(DKS) + s(ED) + t.e.(DKS, ED) + controls \quad (1)$$

$$SUP = s(DCs) + s(ED) + t.e.(DCs, ED) + controls \quad (2)$$

Where, $s(\cdot)$ are univariate smoothers (e.g, penalized splines), $t.e.(\cdot)$ are bivariate surfaces (tensor products) that capture nonlinear moderation, and *controls*

are the controls variables. To this end, it used python software. The semi-parametric GAMs make it clear that the relationship between DKS, ED, and DCs is neither linear nor uniform across the covariate space. In the full sample, modeling DCs with $s(\text{DKS})+s(\text{ED})+\text{te}(\text{DKS},\text{ED})$ yields a pseudo- R^2 around 0.58 (GCV=0.44) and reveals a smooth nonlinear interaction, i.e., the marginal effect of DKS on DCs varies with ED, but not monotonically. As ED moves from low to moderate levels, the DKS→DCs slope tends to increase. At the extremes of ED (very low or very high), that marginal gain flattens, indicating a “dome-shaped” (inverted-U) pattern typical of complementarities subject to practical limits of coordination, absorption, and reconfiguration. This is precisely the kind of geometry a single linear interaction term (DKS×ED) cannot capture, explaining why PLS and even linear or quantile regressions sometimes failed to find a stable moderator.

When stratified by country, the ED becomes sharper. In the developed-country context (ID=2, UK), model fit is high (pseudo- $R^2=0.745$, GCV=0.30) and the interaction surface is more pronounced, where DKS contributes strongly to DCs when ED lies in the “optimal corridor.” In Brazil (ID=1), the same logic holds but with smoother curvature and more noise (pseudo- $R^2=0.453$, GCV=0.73), i.e., the gain exists, yet is more sensitive to execution frictions, process gaps, and contextual constraints. Substantively, more robust institutional environments appear to let investments in DKS translate into DCs more efficiently, while preserving the same constraint of “too much dynamism” at the extremes. In the next link of the chain, from DCs to SUP, the picture is similar but less intense. DCs has a positive, curvilinear effect on SUP, and ED gains acts as a nonlinear moderator, with evidence of a “sweet spot” of dynamism that enhances the conversion of DCs into outcomes. This channel is weaker than DKS→DCs, consistent with SUP’s greater multi-causality. On average, the slope maps

show that the marginal benefit of increasing DCs is larger when ED is not at its extremes.

Therefore, taken together, the GAMs confirm the central thesis that ED influence the relationships, more strongly in DKS→DCs and more clearly in the UK, but does so nonlinearly. There is a band of ED that amplifies synergy and extremes that dampen it. This geometry reconciles the mixed PLS findings and invites theorizing complementarities in terms of thresholds and context, not a single average slope.

5. Discussion

This study analyzes recent research on the antecedents of sustainable performance (SUP) and dynamic capabilities (DCs) in innovation to clarify how deliberate and emergent knowledge strategy through digital tools interact to address environmental dynamism (ED) in both developing and developed economies. Drawing from the literature on knowledge management, digital technologies, and sustainability, the study formulates two research questions and proposes a theoretical model. The study subsequently tests the proposed hypotheses. The results indicate that digital knowledge strategy (DKS) serves as a predictor of firms' DCs which in turn contribute to SUP in conditions of ED. This is consistent with earlier studies indicating that DKS equips firms with up-to-date, fit-for-purpose digital tools that support both formal planning and adaptive, emergent strategizing (Yoshikuni, Dwivedi, Tito, *et al.*, 2025). In essence, firms that effectively integrate digital technologies into knowledge strategizing can reconcile the competing demands of exploration and exploitation planning for action to leverage SUP through the mediating role of DCs in innovation, a major challenge for organizations in advanced and emerging economies. These findings address the first research question (RQ1) by demonstrating that DKS exerts

significant direct effects on DCs and indirect impact on SUP. However, ED did not significantly influence the relationship between DKS and DCs, nor between DCs and SUP.

The second research question (RQ2) indicates that geographic region significantly influences the relationships within the proposed model. The English companies exhibit a greater presence of DKS, DCs, SUP, and ED compared to Brazilian firms. This perspective aligns with prior conceptual studies on digital technologies (Melville, Kraemer and Gurbaxani, 2004; Kohli and Grover, 2008; Henfridsson and Lind, 2014; Marabelli and Galliers, 2017; Steininger *et al.*, 2022), knowledge strategy (Bolisani and Bratianu, 2017; Wolf and Floyd, 2017), dynamic capabilities (Teece, Peteraf and Leih, 2016; Li, Teece, *et al.*, 2025), and sustainable literature (Danso *et al.*, 2019; Osei *et al.*, 2024), which suggest that economic and cultural contexts shape the maturity of digital tool adoption, the diffusion of knowledge strategy practices, the development of organizational capabilities, and the attainment of corporate sustainable performance outcomes under market challenges.

Overall, this study advances understanding of the relationship between DKS and SUP and elucidates how DCs mediate this relationship under ED conditions across both developing and developed economies. These results provide several theoretical and managerial implications.

5.1 Theoretical contribution

This research advances theory by clarifying the interrelationships among DKS, DCs, SUP, and ED and by providing empirical evidence across multiple industries from

Brazil and the United Kingdom. In doing so, it addresses the research gaps identified by Massa et al. (2023) and Yoshikuni et al. (2026). First, the results emphasize the central role of DKS in promoting DCs development. Successful, deliberate, and emergent planning actions enabled by digital technologies rely on rapid, precise, and clear and traceable information exchange to support practitioners' strategic decision-making. DKS functions as a strategic resource encompassing tangible, human, and intangible assets that enhance organizational DCs in innovation, as explained by the RBV, KBT, and DCT, extending beyond ordinary operational capabilities. Accordingly, the study advances knowledge management theory by positioning DKS not merely as a digitalized knowledge-management practice, but as a strategic capability that closes the gap between a firm's current knowledge base and the knowledge required for effective strategy formulation, implementation, and adaptation. In this way, the study provides a more process-oriented explanation of how digitally enabled knowledge is mobilized and converted into organizational capabilities through a rational and prescriptive planning approach (Chan, Denford and Wang, 2019; Li, Peng and Li, 2024; Yoshikuni, Dwivedi, Tito, *et al.*, 2025).

Second, this study broadens insight of the DKS-DCs relationship by showing that DKS prompts organizations to develop DCs that underpin innovation in challenging contexts, thereby extending the theoretical foundation of the knowledge management and dynamic capability literature (Li, Teece, *et al.*, 2025). Enterprises with stronger DKS are better able to sense by identifying, developing, co-developing, and shaping opportunities and threats in ways that address customer needs and business requirements (Teece, Peteraf and Leih, 2016), seize opportunities by mobilizing the organizational resources required to meet market demands (Wamba *et al.*, 2020; Bechtel, Kaufmann and Kock, 2023; Yoshikuni, Dwivedi, Tito, *et al.*, 2025),

and transform by enhancing, combining, protecting, and, when needed, reconfiguring tangible and intangible assets to sustain competitiveness (Girod, Birkinshaw and Prange, 2023; Li, Teece, *et al.*, 2025).

Accordingly, the study advances digital technology, KBT, and DCT literatures by explaining the capability-building mechanism through which digitally mobilized strategic knowledge is translated into sensing, seizing, and transforming activities. Rather than treating knowledge management and DCs as separate organizational processes, the findings position DKS as the connecting mechanism that translates strategic knowledge into adaptive, innovation-oriented organizational action.

Third, this research advances theory by explaining how DKS contributes to sustainability outcomes through the intervening mechanism of DCs. SUP is advanced when DCs enable enterprises to strengthen environmental performance and corporate reputation performance across prosperous and emerging contexts. Hence, DCs demonstrate as a full mediator in the relationship between DKS and SUP, i.e., DKS does not directly impact SUP, thus, strategy actions are applicable to build organizational capabilities within the cluster of sensing, seizing, and transforming routines to leverage SUP. This evidence advances current understanding of resource-based framework (RBV, KBT, and DCT), which argues that enterprise strategy depends on resources (tangibles, human, and intangibles) that enable the capability to leverage gains in performance outcomes (Grant, 1991).

From the post hoc analysis as supplementary to the hypotheses H4a and H4b. The finding supports a view of contingent, non-monotonic complementarity, where ED is not a constant amplifier; it works best within moderate ranges. Very low dynamism constrains variety, exploration, and learning, whereas very high ED raises

reconfiguration costs, creates overload, and can misalign value-capture routines. Cross-country differences reinforce that institutional context shapes both the slope and the curvature of the relationship, in more developed settings, the translation of DKS into DCs is more efficient, yet also more sensitive to excess change, contributing to knowledge that non-linear statistics methods are necessary to complementary understand the results of PLS-SEM (Wamba *et al.*, 2020; Pappas and Woodside, 2021; Yoshikuni, Dwivedi, Filho, *et al.*, 2025).

Finally, by drawing evidence from multiple sectors in Brazil and the UK, the study grounds its framework in advanced and emerging economic contexts marked by volatile competitive conditions, differing levels of regulatory institutionalization, and evolving sustainability expectations. Cross-group differences associated with regional context are demonstrated in the proposed model through differences in construct means, path coefficients, and variance explained for DCs and SUP under ED conditions. Companies in the UK exhibit a strong DKS and DCs, enabling them to achieve a higher degree of SUP compared to Brazilian firms. These results confirm that UK companies have higher readiness by prospector competitive strategy tend to be younger, concentrated in services, and larger, in terms of DKS and operational capacities in sensing opportunities in the external environment, enabling them to capture these opportunities by creating new products and services, and transforming their operational routines to meet the sustainability market and customers' requirements. This finding aligns with Brazil's current sustainability regulations, as outlined by the Securities and Exchange Commission (CVM) in Resolution 193 (2023). Starting in 2025, this rule requires publicly traded companies to disclose climate risk and ESG (Environmental, Social, and Governance) data alongside their financial statements, which are already integrated into strategy content. In the order hand, since

2014, developed economies within the European Union have adopted best practices in Integrated Reporting, including International Financial Reporting Standards (IFRS) S1 and S2. Corporate law reforms, such as Directive No. 2014/95/EU, mandate sustainability disclosures. These initiatives encompass comprehensive measures, such as Law 9/2017 on public sector contracts, which incorporates sustainability criteria into procurement processes, as well as targeted actions addressing specific elements of factors. Therefore, Brazilian enterprises, characterized by a defender competitive strategy, greater maturity, service concentration, and large size, as early adopters of sustainability practices, encounter distinct challenges in achieving SUP under ED. In contrast, the UK enterprises in developed economies demonstrate greater maturity in implementing sustainability practices. They not only fulfill sustainability-related legal requirements but also associate SUP with meeting competitive market demands, thereby enhancing environmental and corporate reputation.

Accordingly, this framework provides fresh empirical support and offers a platform for future research on how organizations can integrate digital technologies with knowledge practices, strategizing processes, and DCs to deliver SUP in turbulent environments across advanced and emerging settings.

5.2 Management implications

In addition to its theoretical implications, this study offers several actionable recommendations for practitioners. The findings indicate that digital technologies serve as strategic resources for integrating deliberate and emergent strategy approaches, as

well as for developing DCs, which are crucial for achieving sustainable outcomes in developed and developing countries. The findings indicate that firms should direct digital investments (such as big data, analytics, business intelligence, machine learning, and artificial intelligence) toward tools that enable C-level, senior, and middle managers to integrate strategic information, identify emerging opportunities and threats, coordinate resource allocation, and translate strategic priorities into timely organizational action.

Furthermore, the findings encourage industry leaders to use DKS to strengthen firms' sensing, seizing, and transforming capabilities. In practice, managers should deploy digital tools to monitor market and technological changes, identify emerging opportunities and threats, coordinate the allocation of strategic resources, and reconfigure organizational routines in response to evolving business and sustainability requirements. Hence, by effectively coordinating strategic knowledge planning, firms can shift from reactive responses to proactive strategic action, enabling them to accelerate the development and introduction of innovative products and services and capitalize on emerging market opportunities. Achieving long-term sustainable competitiveness, therefore, requires the purposeful integration of top-down direction and emergent bottom-up insights through digital tools.

Finally, Brazilian managers should consider adopting digital tools as effective alternatives for enhancing knowledge strategy and achieving comparable levels of readiness in DCs, thereby leveraging SUP as those observed in developed industries. Recent trade regulations between Brazil and the United States (Lankes, 2025) have compelled Brazilian enterprises to seek alternative international markets. In Brazil, digital transformation is advancing unevenly because of persistent shortages of qualified digital professionals (insufficient supply of workers with advanced

technological and analytical skills), disparities in digital education and infrastructure (unequal access to training, connectivity, and modern technological resources), and fragmented institutional support (limited coordination among government, educational institutions, and industry), which restrict firms (particularly smaller enterprises) from developing the capabilities required to adopt, integrate, and generate value from digital technologies (OECD, 2020; Brasscom, 2024).

The findings suggest that Brazilian companies need to enhance their digital capabilities to achieve superior sustainability and competitiveness in developed markets through DKS. Conversely, the UK enterprises that want to sell products/services in the Brazilian market must assess the local market's maturity in terms of sustainability under higher ED. These enterprises should adapt their products and services, calibrating them to deliver value in emerging economies, where competitive pricing is essential.

5.3 Limitations and future studies

Empirical research has specific constraints that present opportunities for further exploration. First, the data collection relied on a single source who was instructed to recruit additional respondents for the questionnaires. Future research should employ multi-source data collection by combining responses from senior executives, middle managers, and operational employees with objective organizational indicators and archival data. This approach would reduce reliance on single-informant perceptions and provide a more comprehensive assessment of constructs across organizational levels. Second, the results are relevant to the specific study context, which enhances the generalizability and applicability of related research across different countries and contextual settings. Third, the RBV posits that organizational strategy and IT-business

value are facilitated by resources that develop capabilities and support sustainable competitive performance (Grant, 1991; Barney, 2001; Melville, Kraemer and Gurbaxani, 2004). Future research should examine DKS capability orchestrated by tangible, human, and intangible resources as second-order construct. Fourth, the structural equation modeling method proved efficient in generating predictive results for the proposed model (Hair *et al.*, 2022). However, subsequent studies could employ qualitative comparative analysis to identify equifinality and achieve improved outcome performance in diverse contextual environments, as mentioned by Pappas and Woodside (2021). Data collection followed cross-cultural guidelines proposed by Hult *et al.* (2008), encompassing functional, conceptual, and category equivalence, as well as standardized eligibility criteria, screening procedures, recruitment-source documentation, and harmonized survey instruments across both countries. Partial measurement invariance was established, supporting construct comparability between the two samples (Hair *et al.*, 2022). Nevertheless, differences in recruitment sources may have introduced selection effects that measurement invariance tests did not fully address. Future research can use common quota targets or calibration weighting to minimize sample differences from distinct recruitment sources and mitigate potential selection effects.

6. Conclusion

The empirical findings of this study validate the pivotal role of digital knowledge strategy (DKS), in fostering operational capabilities and enhancing sustainable performance (SUP) within rich and emerging economies. Therefore, the study confirms that DKS directly drive SUP mediated by dynamic capabilities (DCs) in sensing, seizing and transforming routines to create innovation in both economies. Additionally, it

demonstrates that higher degrees of DKS, DCs and SUP are associated with higher degrees of environmental dynamism (ED). Furthermore, the results highlight that the UK companies have strong readiness of DKS, DCs, SUP under ED than Brazilian enterprises.

The proposed model was successfully implemented using structural equation modeling, indicating that the method is suitable and stable for testing the study framework. In support of this, the dataset comprises 302 firms (152 from Brazil and 150 from the United Kingdom), covering multiple sectors and differing in size and organizational maturity. Furthermore, the generalized additive model (GAM) methodology proved useful as a diagnostic when linear models yielded null effects, thereby helping distinguish between no relationship and functional-form misspecification. Building on sustainability, strategic management and digital technologies literature, this study addresses critical research lacunas mentioned in previous studies.

Doing so contributes to academic discourse and managerial practice, offering valuable insights into how enterprises in advanced and emerging economies, through digital tools balance deliberative and emergent strategic planning to build DCs to gain SUP under ED.

References

- Akter, S. *et al.* (2016) 'How to improve firm performance using big data analytics capability and business strategy alignment?', *International Journal of Production Economics*, 182, pp. 113–131. Available at: <https://doi.org/10.1016/j.ijpe.2016.08.018>.
- Ali, M. and Varoğlu, M.A. (2022) 'Revisiting the Mintzberg, Lawrence, and Lorsch theories about organisational structure, strategy, and environmental dynamism from the perspective of small firms', *Technology Analysis and Strategic Management*, 34(1), pp. 1–15. Available at: <https://doi.org/10.1080/09537325.2021.1880003>.
- Amrollahi, A. *et al.* (2025) 'Exploring the outcomes of open strategy and an open organisational climate: A configurational approach', *Australian Journal of Management* [Preprint], (March). Available at: <https://doi.org/10.1177/03128962251329118>.
- Amui, L.B.L. *et al.* (2017) 'Sustainability as a dynamic organizational capability: a systematic review and a future agenda toward a sustainable transition', *Journal of Cleaner Production*, 142, pp. 308–322. Available at: <https://doi.org/10.1016/j.jclepro.2016.07.103>.
- De Angelis, R., Morgan, R. and De Luca, L.M. (2023) 'Open strategy and dynamic capabilities: A framework for circular economy business models research', *Business Strategy and the Environment*, 32(7), pp. 4861–4873. Available at: <https://doi.org/10.1002/bse.3397>.
- Annunziata, E. *et al.* (2018) 'The role of organizational capabilities in attaining corporate sustainability practices and economic performance: Evidence from Italian wine industry', *Journal of Cleaner Production*, 171, pp. 1300–1311. Available at: <https://doi.org/10.1016/j.jclepro.2017.10.035>.
- Aziz, N.A. *et al.* (2024) 'The impact of big data analytics on innovation capability and sustainability performance of hotels: evidence from an emerging economy', *Journal of Enterprise Information Management*, 37(3), pp. 1044–1068. Available at: <https://doi.org/10.1108/JEIM-07-2023-0354>.
- Baptista, J., Wilson, A.D. and Galliers, R.D. (2021) 'Instantiation: Reconceptualising the role of technology as a carrier of organisational strategising', *Journal of Information Technology*, 36(2), pp. 109–127. Available at: <https://doi.org/10.1177/0268396220988550>.
- Barney, J.B. (1991) 'Firm Resources and Sustained Competitive Advantage', *Journal of Management*, pp. 99–120. Available at: <https://doi.org/10.1177/014920639101700108>.
- Barney, J.B. (2001) 'Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view', *Journal of Management*, 27(6), pp. 643–650. Available at: [https://doi.org/10.1016/S0149-2063\(01\)00115-5](https://doi.org/10.1016/S0149-2063(01)00115-5).
- Bechtel, J., Kaufmann, C. and Kock, A. (2023) 'The interplay between dynamic capabilities' dimensions and their relationship to project portfolio agility and success',

International Journal of Project Management, 41(4), p. 102469. Available at: <https://doi.org/10.1016/j.ijproman.2023.102469>.

Becker, J.M., Proksch, D. and Ringle, C.M. (2022) 'Revisiting Gaussian copulas to handle endogenous regressors', *Journal of the Academy of Marketing Science*, 50(1), pp. 46–66. Available at: <https://doi.org/10.1007/s11747-021-00805-y>.

Bolisani, E. and Bratianu, C. (2017) 'Knowledge strategy planning: an integrated approach to manage uncertainty, turbulence, and dynamics', *Journal of Knowledge Management*, 21(2), pp. 233–253. Available at: <https://doi.org/10.1108/JKM-02-2016-0071>.

Bowman, G. and Parks, R.W. (2024) 'Between episodes of strategy: Sociomateriality, sensemaking, and dysfunction in a scenario planning process', *Journal of Business Research*, 179(April), p. 114690. Available at: <https://doi.org/10.1016/j.jbusres.2024.114690>.

Brasscom (2024) *Brazil Digital Plan 2030+: Digital Technologies Driving Sustainable Growth and Social Inclusion*. Brasilia, Brazil.

Bughin, J., Deakin, J. and O'beirne, B. (2019) *Digital transformation: Improving the odds of success*, *McKinsey Quarterly*. Available at: <https://www.mckinsey.com/~media/McKinsey/Business Functions/McKinsey Digital/Our Insights/Digital transformation Improving the odds of success/Digital-transformation-Improving-the-odds-of-success-final.pdf>.

Cepeda-Carrion, I. *et al.* (2017) 'Critical processes of knowledge management: An approach toward the creation of customer value', *European Research on Management and Business economics*, 23(1), pp. 1–7. Available at: <https://doi.org/10.1016/j.iedeen.2016.03.001>.

Cepeda, G. and Vera, D. (2007) 'Dynamic capabilities and operational capabilities: A knowledge management perspective', *Journal of Business Research*, 60(5), pp. 426–437. Available at: <https://doi.org/10.1016/j.jbusres.2007.01.013>.

Chan, Y.E., Denford, J.S. and Wang, J. (2019) *The Co-Evolution of IT, Knowledge, and Agility in Micro and Small Enterprises*, *Journal of Information and Knowledge Management*. Available at: <https://doi.org/10.1142/S0219649219500278>.

Chan, Y.E. and Reich, B.H. (2007) 'IT alignment: What have we learned?', *Journal of Information Technology*, 22(4), pp. 297–315. Available at: <https://doi.org/10.1057/palgrave.jit.2000109>.

Chanias, S., Myers, M.D. and Hess, T. (2019) 'Digital transformation strategy making in pre-digital organizations: The case of a financial services provider', *Journal of Strategic Information Systems*, 28(1), pp. 17–33. Available at: <https://doi.org/10.1016/j.jsis.2018.11.003>.

Chatterjee, S. *et al.* (2023) 'The consequences of innovation failure: An innovation capabilities and dynamic capabilities perspective', *Technovation*, 128(March), p. 102858. Available at: <https://doi.org/10.1016/j.technovation.2023.102858>.

Chen, D.Q. *et al.* (2010) 'Information Systems Strategy: Reconceptualization, Measurement, and Implications', *MIS Quarterly*, 34(2), pp. 233–259.

Chotia, V. *et al.* (2026) 'Driving business performance through green procurement policy: The power of supply chain information sharing for robust supply chain', *Technovation*, 149(July 2024), p. 103358. Available at: <https://doi.org/10.1016/j.technovation.2025.103358>.

CIA (2025) *The World Factbook - Central Intelligence Agency*. Available at: https://www.cia.gov/library/publications/resources/the-world-factbook/geos/print_br.html.

Coltman, T. *et al.* (2015) 'Strategic IT alignment: Twenty-five years on', *Journal of Information Technology*, 30(2), pp. 91–100. Available at: <https://doi.org/10.1057/jit.2014.35>.

Danso, A. *et al.* (2019) 'Environmental sustainability orientation, competitive strategy and financial performance', *Business Strategy and the Environment*, 28(5), pp. 885–895. Available at: <https://doi.org/10.1002/bse.2291>.

Donaldson, L. (2014) *The Contingency Theory of Organizations*. Online Pub. SAGE Publications, Inc. Available at: <https://doi.org/http://dx.doi.org/10.4135/9781452229249>.

Dubey, R. *et al.* (2019) 'Can big data and predictive analytics improve social and environmental sustainability?', *Technological Forecasting and Social Change*, 144(June 2017), pp. 534–545. Available at: <https://doi.org/10.1016/j.techfore.2017.06.020>.

Dubey, R. *et al.* (2023) 'Dynamic digital capabilities and supply chain resilience: The role of government effectiveness', *International Journal of Production Economics*, 258(January), p. 108790. Available at: <https://doi.org/10.1016/j.ijpe.2023.108790>.

European Parliament and Council of the European Union (2014) 'Directive 2014/95/EU of European Parliament and the council', *Official Journal of the European Union*, pp. 1–9. Available at: <https://eur-lex.europa.eu/legal-content/PT/TXT/PDF/?uri=CELEX:32014L0095&from=EN>.

Failenschmid, J.I. *et al.* (2025) 'Modelling non-linear psychological processes: Reviewing and evaluating non-parametric approaches and their applicability to intensive longitudinal data', *British Journal of Mathematical and Statistical Psychology*, (May), pp. 1–31. Available at: <https://doi.org/10.1111/bmsp.12397>.

Fan, Y. *et al.* (2026) 'Digital innovation capabilities: a systematic review, synthesis and research agenda', *Technovation*, 152(November 2024), p. 103496. Available at: <https://doi.org/10.1016/j.technovation.2026.103496>.

Fang, M., Li, R. and Wang, Y. (2026) 'Board networks and firm's digital transformation: Evidence from China', *Technovation*, 152(January), p. 103482. Available at: <https://doi.org/10.1016/j.technovation.2026.103482>.

Forth, P. *et al.* (2020) *Flipping the Odds of Digital Transformation Success*, Boston Consulting Group.

Gerow, J.E. *et al.* (2014) 'Looking toward the future of IT–business strategic alignment through the pas: a meta-analysis', *MIS Quarterly*, 38(4), pp. 1159–1185.

Ghosh, S. *et al.* (2022) 'Digital transformation of industrial businesses: A dynamic capability approach', *Technovation*, 113(November 2021), p. 102414. Available at: <https://doi.org/10.1016/j.technovation.2021.102414>.

Girod, S.J.G., Birkinshaw, J. and Prange, C. (2023) 'Business Agility: Key Themes and Future Directions', *California Management Review*, 65(4), pp. 5–21. Available at: <https://doi.org/10.1177/00081256231186641>.

Grant, R.M. (1991) 'The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation', *California Management Review*, 33(3), pp. 114–135. Available at: <https://doi.org/10.2307/41166664>.

Guo, R. *et al.* (2025) 'How does digital new venture's customer orientation enhance strategic agility? The roles of strategic learning', *Long Range Planning*, 58(3), p. 102527. Available at: <https://doi.org/10.1016/j.lrp.2025.102527>.

Hair, J.F. *et al.* (2022) *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Third. Edited by SAGE. London, UK: SAGE Publications, Inc.

Hamann, P.M., Halw, O. and Guenther, T.W. (2023) 'Meta-analysis of the corporate planning– organizational performance relationship: A research note', *Strategic Management*, 44(7), pp. 1803–1819.

Hattfield, S. *et al.* (2024) *Digital change capabilities can make or break a digital transformation*. United State of American: Deloitte Touche Tohmatsu Limited,.

Helfat, C.E. and Raubitschek, R.S. (2018) 'Dynamic and integrative capabilities for profiting from innovation in digital platform-based ecosystems', *Research Policy*, 47(8), pp. 1391–1399. Available at: <https://doi.org/10.1016/j.respol.2018.01.019>.

Helfat, C.E. and Winter, S.G. (2011) 'Research perspectives untangling dynamic and operational capabilities: strategy for (n)ever-changing world', *Strategic Management Journal*, 32, pp. 1243–1250. Available at: <https://doi.org/10.1002/smj.955>.

Henderson, J.C. and Venkatraman, N. (1999) 'Strategic alignment: leveraging information technology for transforming organizations', *IBM Systems Journal*, 38(2), pp. 472–484. Available at: <https://doi.org/10.1147/SJ.1999.5387096>.

Henfridsson, O. and Lind, M. (2014) 'Information systems strategizing, organizational sub-communities, and the emergence of a sustainability strategy', *Journal of Strategic Information Systems*, 23(1), pp. 11–28. Available at: <https://doi.org/10.1016/j.jsis.2013.11.001>.

Hernandes, A.N. *et al.* (2026) 'Developing and validating scale for enterprise architecture capability and business – IT alignment', *Journal of Enterprise Information Management*, 39(1), pp. 1–41. Available at: <https://doi.org/10.1108/JEIM-05-2025-0393>.

Heyden, M.L.M. *et al.* (2017) 'Rethinking “Top-Down” and “Bottom-Up” Roles of Top and Middle Managers in Organizational Change: Implications for Employee Support', *Journal of Management Studies* [Preprint]. Available at: <https://doi.org/10.1111/joms.12258>.

Hua, X. *et al.* (2025) 'Blockchain technology adoption and sustainable performance in

Chinese manufacturing: insights on learning and organizational inertia', *Industrial Management and Data Systems*, 125(2), pp. 604–626. Available at: <https://doi.org/10.1108/IMDS-08-2023-0552>.

Hughes, P. and Hodgkinson, I. (2021) 'Knowledge management activities and strategic planning capability development', *European Business Review*, 33(2), pp. 238–254. Available at: <https://doi.org/10.1108/EBR-03-2019-0034>.

Hult, G.T. *et al.* (2008) 'Data equivalence in cross-cultural international business research: Assessment and guidelines', *Journal of International Business Studies*, 39(6), pp. 1027–1044. Available at: <https://doi.org/10.1057/palgrave.jibs.8400396>.

Huo, B., Gu, M. and Wang, Z. (2019) 'Green or lean? A supply chain approach to sustainable performance', *Journal of Cleaner Production*, 216, pp. 152–166. Available at: <https://doi.org/10.1016/j.jclepro.2019.01.141>.

Huynh, M.T., Nippa, M. and Aichner, T. (2023) 'Big data analytics capabilities: Patchwork or progress? A systematic review of the status quo and implications for future research', *Technological Forecasting and Social Change*, 197(October), p. 122884. Available at: <https://doi.org/10.1016/j.techfore.2023.122884>.

Jansen, J.J.P., Vera, D. and Crossan, M. (2009) 'Strategic leadership for exploration and exploitation: The moderating role of environmental dynamism', *The Leadership Quarterly*, 20, pp. 5–18. Available at: <https://doi.org/10.1016/j.leaqua.2008.11.008>.

Jarzabkowski, P. and Kaplan, S. (2015) 'Strategy tools-in-use: a framework for understanding "technologies of rationality" in practice', *Strategic Management Journal*, 36. Available at: <https://doi.org/10.1002/smj.2270>.

Kamasak, R., Yozgat, U. and Yavuz, M. (2017) 'Knowledge process capabilities and innovation: Testing the moderating effects of environmental dynamism and strategic flexibility', *Knowledge Management Research and Practice*, 15(3), pp. 356–368. Available at: <https://doi.org/10.1057/s41275-017-0068-4>.

Kersten, M. *et al.* (2022) 'Motives and strategies of CEOs for stimulating sharing and application of knowledge in the care and support for people with intellectual disabilities', *Journal of Knowledge Management*, 26(11), pp. 114–141. Available at: <https://doi.org/10.1108/JKM-06-2021-0463>.

Khan, O., Daddi, T. and Iraldo, F. (2020) 'The role of dynamic capabilities in circular economy implementation and performance of companies', *Corporate Social Responsibility and Environmental Management*, 27(6), pp. 3018–3033. Available at: <https://doi.org/10.1002/csr.2020>.

Kohli, R. and Grover, V. (2008) 'Business Value of IT: An Essay on Expanding Research Directions to Keep up with the Times', *Journal of the Association for Information Systems*, 9(1), pp. 23–39. Available at: <https://aisel.aisnet.org/jais/vol9/iss1/1/>.

Kristoffersen, E. *et al.* (2021) 'The Effects of Business Analytics Capability on Circular Economy Implementation, Resource Orchestration, Capability and Firm Performance', *International Journal of Production Economics*, 239(April), p. 108205. Available at: <https://doi.org/10.1016/j.ijpe.2021.108205>.

Kulichyova, A. *et al.* (2025) 'Digital transformation in large established organisations: Four restructuring dilemmas based on dynamic capabilities', *International Journal of Management Reviews*, (January 2023), pp. 420–450. Available at: <https://doi.org/10.1111/ijmr.12395>.

Lankes, A. (2025) 'Trump's astonishing battering of Brazil: MAGA bullying is backfiring, boosting Lula's government', *The Economist*, p. online. Available at: <https://www.economist.com/the-americas/2025/07/24/trumps-astonishing-battering-of-brazil>.

Lawton, T.C. and Vassolo, R.S. (2022) 'Dynamics in strategic management research: An agenda for LRP', *Long Range Planning*, 55(5), pp. 1–4. Available at: <https://doi.org/10.1016/j.lrp.2022.102246>.

Li, B., Teece, D.J., *et al.* (2025) 'Dynamic Knowledge Management: A dynamic capabilities approach to knowledge management', *Technovation*, 147(July). Available at: <https://doi.org/10.1016/j.technovation.2025.103316>.

Li, B., Wang, L., *et al.* (2025) 'How does artificial intelligence empower enterprise technological innovation: from the perspective of knowledge management capability', *Journal of Knowledge Management*, (25), pp. 1–31. Available at: <https://doi.org/10.1108/JKM-03-2025-0345>.

Li, S. *et al.* (2024) 'Economic complexity, natural resource abundance and education: Implications for sustainable development in BRICST economies', *Resources Policy*, 89(February 2023), p. 104572. Available at: <https://doi.org/10.1016/j.resourpol.2023.104572>.

Li, T. (Carol) and Chan, Y.E. (2019) 'Dynamic information technology capability: Concept definition and framework development', *Journal of Strategic Information Systems*, 28(4), p. 101575. Available at: <https://doi.org/10.1016/j.jsis.2019.101575>.

Li, X., Peng, Z. and Li, K. (2024) 'Impact of boundary-spanning search on firm innovation performance: a strategic knowledge integration perspective', *Journal of Knowledge Management*, 28(10), pp. 3076–3104. Available at: <https://doi.org/10.1108/JKM-07-2023-0575>.

Mantere, S. and Whittington, R. (2021) 'Becoming a strategist: The roles of strategy discourse and ontological security in managerial identity work', *Strategic Organization*, 19(4), pp. 553–578. Available at: <https://doi.org/10.1177/1476127020908781>.

Marabelli, M. and Galliers, R.D. (2017) 'A reflection on information systems strategizing: the role of power and everyday practices', *Information Systems Journal*, 27(3), pp. 347–366. Available at: <https://doi.org/10.1111/isj.12110>.

Massa, S. *et al.* (2023) 'Digital technologies and knowledge processes: new emerging strategies in international business. A systematic literature review', *Journal of Knowledge Management*, 27(11), pp. 330–387. Available at: <https://doi.org/10.1108/JKM-12-2022-0993>.

Melville, N., Kraemer, K. and Gurbaxani, V. (2004) 'Review: Information Technology and Organizational Performance', *MIS Quarterly*, 28(2), pp. 283–322.

Mikalef, P. *et al.* (2020) 'Exploring the relationship between big data analytics capability and competitive performance: The mediating roles of dynamic and operational capabilities', *Information and Management*, 57(2), p. 103169. Available at: <https://doi.org/10.1016/j.im.2019.05.004>.

Mikalef, P. and Gupta, M. (2021) 'Artificial intelligence capability: Conceptualization, measurement calibration, and empirical study on its impact on organizational creativity and firm performance', *Information and Management*, 58(3), p. 103434. Available at: <https://doi.org/10.1016/j.im.2021.103434>.

Mikalef, P. and Krogstie, J. (2020) 'Examining the interplay between big data analytics and contextual factors in driving process innovation capabilities', *European Journal of Information Systems*, 29(3), pp. 260–287. Available at: <https://doi.org/10.1080/0960085X.2020.1740618>.

Miles, R.E. *et al.* (1978) 'Organizational strategy Structure and Process.pdf', *Academy of Management Review*, Vol. 3 No.(1), pp. 546–562.

Mintzberg, H. and Water, J.A. (1985) 'Of Strategies, Deliberate and Emergent', *Strategic Management Journal*, 6(3), pp. 257–272.

Moeini, M., Rahrovani, Y. and Chan, Y.E. (2019) 'A review of the practical relevance of IS strategy scholarly research', *Journal of Strategic Information Systems*, 28(2), pp. 196–217. Available at: <https://doi.org/10.1016/j.jsis.2018.12.003>.

Morton, J., Amrollahi, A. and Wilson, A.D. (2022) 'Digital strategizing - An assessing review, definition, and agenda', *Journal of Strategic Information Systems*, 31(2), pp. 1–17. Available at: <https://doi.org/https://doi.org/10.1016/j.jsis.2022.101720>.

Morton, J., Wilson, A.D. and Cooke, L. (2020) 'The digital work of strategists: Using open strategy for organizational transformation', *Journal of Strategic Information Systems*, 29(2), pp. 1–17. Available at: <https://doi.org/10.1016/j.jsis.2020.101613>.

Mouton, L. and Images, G. (2018) *How to avoid digital- strategy pitfalls*, McKinsey & Company.

OECD, R. of D.T. (2020) *Going digital in Brazil*, OECD Publishing,. Paris. Available at: www.oecd.org/going-digital.

Osei, V. *et al.* (2024) 'Competitive strategy and circular economy practice implementation toward corporate sustainability performance', *Business Strategy and the Environment*, 33(6), pp. 5284–5302. Available at: <https://doi.org/10.1002/bse.3749>.

Pappas, I. *et al.* (2018) 'Big Data and Business Analytics Ecosystems : Paving the way towards digital transformation and sustainable societies', *Information Systems and e-Business Management*, 16(August), p. 14. Available at: <https://doi.org/10.1007/s10257-018-0377-z>.

Pappas, I.O. and Woodside, A.G. (2021) 'Fuzzy-set Qualitative Comparative Analysis (fsQCA): Guidelines for research practice in Information Systems and marketing', *International Journal of Information Management*, 58(February), p. 102310. Available at: <https://doi.org/10.1016/j.ijinfomgt.2021.102310>.

Peçanha, L.M. and Ferreira, J.J. (2025) 'Sustainable strategies and circular economy ecosystems: A literature review and future research agenda', *Business Strategy and the Environment*, 34(1), pp. 1440–1459. Available at: <https://doi.org/10.1002/bse.4022>.

Peters, M.D. *et al.* (2016) 'Business intelligence systems use in performance measurement capabilities: Implications for enhanced competitive advantage', *International Journal of Accounting Information Systems*, 21, pp. 1–17. Available at: <https://doi.org/10.1016/j.accinf.2016.03.001>.

Qi, Y. *et al.* (2024) 'Ambidextrous knowledge accumulation, dynamic capability and manufacturing digital transformation in China', *Journal of Knowledge Management*, 28(8), pp. 2275–2305. Available at: <https://doi.org/10.1108/JKM-09-2022-0717>.

Rathore, B. and Gupta, R. (2025) 'Do green ergonomics practices have an impact on sustainable performance?', *Computers and Industrial Engineering*, 201(January), p. 110854. Available at: <https://doi.org/10.1016/j.cie.2024.110854>.

Restuputri, D.P. *et al.* (2024) 'The role of knowledge management to improve organizational performance through organizational ambidexterity within the uncertainties', *Business Process Management Journal*, 30(7), pp. 2237–2282. Available at: <https://doi.org/10.1108/BPMJ-08-2023-0614>.

Sarstedt, M. and Mooi, E. (2014) *A Concise Guide to Market Research: The Process, Data, and Methods Using IBM SPSS Statistics*. Second Edi, Fennia. Second Edi. Edited by Springer. Springer Texts in Business and Economics. Available at: <https://doi.org/DOI 10.1007/978-3-642-53965-7>.

Sarstedt, M., Ringle, C.M. and Ting, H. (2020) 'Structural model robustness checks in PLS-SEM', 26(4), pp. 531–554. Available at: <https://doi.org/10.1177/1354816618823921>.

Securities and Exchange Commission (2023) 'CVM Resolution no. 193, of October 20, 2023', *Securities and Exchange Commission*, pp. 1–4.

Shaik, A.S. *et al.* (2024) 'Role of strategic knowledge management practices in enhancing strategic perspectives of an organisation to improve entrepreneurial performance', *Journal of Knowledge Management*, 28(6), pp. 1648–1675. Available at: <https://doi.org/10.1108/JKM-04-2023-0300>.

Sharma, M. *et al.* (2025) 'Navigating smart practices through dynamic capabilities for sustainable performance: A mixed-method approach', *Computers and Industrial Engineering*, 206(May), p. 111215. Available at: <https://doi.org/10.1016/j.cie.2025.111215>.

Shoaib, M. *et al.* (2025) 'Towards a greener tomorrow: investigating the nexus of GHRM, technology innovation, and employee green behavior in driving sustainable performance', *Cogent Business and Management*, 12(1), p. Available at: <https://doi.org/10.1080/23311975.2024.2442095>.

Sithipolvanichgul, J. *et al.* (2025) 'Decomposition of double-loop failure risk in post-innovation failure phase', *Technovation*, 140(September 2024), p. 103121. Available at: <https://doi.org/10.1016/j.technovation.2024.103121>.

Steininger, D.M. *et al.* (2022) 'Dynamic Capabilities in Information Systems Research: A Critical Review, Synthesis of Current Knowledge, and Recommendations for Future Research', *Journal of the Association for Information Systems*, 23(2), pp. 447–490. Available at: <https://doi.org/10.17705/1jais.00736>.

Tallon, P.P. *et al.* (2019) 'Information technology and the search for organizational agility: A systematic review with future research possibilities', *Journal of Strategic Information Systems*, 28(2), pp. 218–237. Available at: <https://doi.org/10.1016/j.jsis.2018.12.002>.

Teece, D.J. (2007) 'Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance', *Strategic Management Journal*, 28(13), pp. 1319–1350.

Teece, D.J. (2014) 'The foundations of enterprise performance: Dynamic and ordinary capabilities in an (economic) theory of firms', *Academy of Management Perspectives*, 28(4), pp. 328–352. Available at: <https://doi.org/10.5465/amp.2013.0116>.

Teece, D.J. (2018) 'Dynamic capabilities as (workable) management systems theory', *Journal of Management & Organization*, (May), pp. 1–10. Available at: <https://doi.org/10.1017/jmo.2017.75>.

Teece, D.J., Peteraf, M. and Leih, S. (2016) 'Dynamic capabilities and organizational agility: Risk, uncertainty, and strategy in the innovation economy', *California Management Review*, 58(4), pp. 13–35. Available at: <https://doi.org/10.1525/cmr.2016.58.4.13>.

Teece, D.J., Pisano, G. and Shuen, A. (1997) 'Dynamic capabilities and strategic management', *Strategic Management Journal*, 18(March), pp. 509–533. Available at: [https://doi.org/10.1002/\(Sici\)1097-0266\(199708\)18:7<509::Aid-Smj882>3.0.Co;2-Z](https://doi.org/10.1002/(Sici)1097-0266(199708)18:7<509::Aid-Smj882>3.0.Co;2-Z).

Touborg, N.F. (2024) *Why digital transformations fail - and what to do about: Digital transformational trends in 2024*. Available at: mplementconsultinggroup.com.

Venkatraman, N. (1989) 'Strategic Orientation of Business Enterprises: The Construct, Dimensionality, and Measurement', *Management Science*, 35(8), pp. 942–962. Available at: <https://doi.org/10.1287/mnsc.35.8.942>.

Vial, G. (2019) 'Understanding digital transformation: A review and a research agenda', *Journal of Strategic Information Systems*, 28(2), pp. 118–144. Available at: <https://doi.org/10.1016/j.jsis.2019.01.003>.

Wamba, S.F. *et al.* (2017) 'Big data analytics and firm performance: effects of dynamic capabilities', *Journal of Business Research*, 70, pp. 356–365. Available at: <https://doi.org/10.1016/j.jbusres.2016.08.009>.

Wamba, S.F. *et al.* (2020) 'The performance effects of big data analytics and supply chain ambidexterity: The moderating effect of environmental dynamism', *International Journal of Production Economics*, 222(September 2019). Available at: <https://doi.org/10.1016/j.ijpe.2019.09.019>.

Wang, J. *et al.* (2026) 'The role of AI-enabled knowledge integration in sustainable

innovations: a sociomaterial perspective', *Journal of Knowledge Management*, (March), pp. 1–28. Available at: <https://doi.org/10.1108/JKM-05-2025-0684>.

Warner, K.S.R. and Wäger, M. (2019) 'Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal', *Long Range Planning*, 52(3), pp. 326–349. Available at: <https://doi.org/10.1016/j.lrp.2018.12.001>.

Whittington, R. (2014) 'Information Systems Strategy and Strategy-as-Practice: A joint agenda', *Journal of Strategic Information Systems*, 23(1), pp. 87–91. Available at: <https://doi.org/10.1016/j.jsis.2014.01.003>.

Wiener, M., Strahringer, S. and Kotlarsky, J. (2025) 'Where are the processes in IS research on digital transformation? A critical literature review and future research directions', *Journal of Strategic Information Systems*, 34(2), p. 101900. Available at: <https://doi.org/10.1016/j.jsis.2025.101900>.

Wilhelm, H., Schlömer, M. and Maurer, I. (2015) 'How dynamic capabilities affect the effectiveness and efficiency of operating routines under high and low levels of environmental dynamism', *British Journal of Management*, 26(2), pp. 327–345. Available at: <https://doi.org/10.1111/1467-8551.12085>.

Winter, S.G. (2003) 'Understanding dynamic capabilities', *Strategic Management Journal*, 24(10 SPEC ISS.), pp. 991–995. Available at: <https://doi.org/10.1002/smj.318>.

Wolf, C. and Floyd, S.W. (2017) 'Strategic Planning Research: Toward a Theory-Driven Agenda', *Journal of Management*, 43(6), pp. 1754–1788. Available at: <https://doi.org/10.1177/0149206313478185>.

Wood, S.N., Goude, Y. and Shaw, S. (2015) 'Generalized additive models for large data sets', *Journal of the Royal Statistical Society. Series C: Applied Statistics*, 64(1), pp. 139–155. Available at: <https://doi.org/10.1111/rssc.12068>.

Xing, X., Zhang, Z. and He, W. (2026) 'AI technology, AI narrative, and firm value', *Technovation*, 149(August 2025), p. 103349. Available at: <https://doi.org/10.1016/j.technovation.2025.103349>.

Yan, M.R., Tran-Danh, N. and Hong, L.Y. (2019) 'Knowledge-based decision support system for improving e-business innovations and dynamic capability of IT project management', *Knowledge Management Research and Practice*, 17(2), pp. 125–136. Available at: <https://doi.org/10.1080/14778238.2019.1601507>.

Yoshikuni, A.C., Dwivedi, R., Filho, A.R.A.V., et al. (2025) 'Big data analytics-enabled dynamic capabilities for corporate performance mediated through innovation ambidexterity: Findings from machine learning with cross-country analysis', *Technological Forecasting and Social Change*, 210(September 2024), p. 123851. Available at: <https://doi.org/10.1016/j.techfore.2024.123851>.

Yoshikuni, A.C., Dwivedi, R., Tito, E.P., et al. (2025) 'How does knowledge strategy planning enhance ambidexterity through business model innovation? The perspective for digital technologies in developing economies', *Journal of Knowledge Management* [Preprint], (October). Available at: <https://doi.org/10.1108/JKM-01-2025-0120>.

Yoshikuni, A.C. *et al.* (2026) 'Digital Strategizing and Green Innovative Competitive Advantage : The Mediating Role of Circular Economy and Sustainability Culture', *Business Strategy and the Environment*, pp. 1–23. Available at: <https://doi.org/10.1002/bse.70910>.

Yoshikuni, A.C., Galvão, F.R. and Albertin, A.L. (2022) 'Knowledge strategy planning and information system strategies enable dynamic capabilities innovation capabilities impacting firm performance', *VINE Journal of Information and Knowledge Management Systems*, 52(4), pp. 508–530. Available at: <https://doi.org/10.1108/VJIKMS-07-2020-0128>.

Yu, L. *et al.* (2025) 'How do strategic orientations and open innovation impact organizational resilience? A knowledge-based view', *Journal of Knowledge Management*, (March), pp. 1–29. Available at: <https://doi.org/10.1108/JKM-06-2025-0811>.

Zhang, J.Z. *et al.* (2025) 'Building resilient circular supply chains with blockchain: Exploring the impact of relationships and capabilities', *Technovation*, 148(July), p. 103327. Available at: <https://doi.org/10.1016/j.technovation.2025.103327>.

Zhang, X., Fang, K. and Zhang, Q. (2022) 'Multivariate functional generalized additive models', *Journal of Statistical Computation and Simulation*, 92(4), pp. 875–893. Available at: <https://doi.org/10.1080/00949655.2021.1979550>.

Zheng, X. (2024) 'How does a firm's digital business strategy affect its innovation performance? An investigation based on knowledge-based dynamic capability', *Journal of Knowledge Management*, 28(8), pp. 2324–2356. Available at: <https://doi.org/10.1108/JKM-05-2023-0410>.